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L4: Entry 37 of 48

File: USPT

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DOCUMENT-IDENTIFIER: US 5625081 A
TITLE: Fluorescent dye intermediates

Brief Summary Text (29):

Finally, Brumbaugh, J. A. et al. in European Patent Application 85103155.9, published Oct. 9, 1985, disclosed a system and method for post-labeling strands of DNA which optionally contained pre-marked nucleosides. The pre-marking could be accomplished by covalent attachment of biotin to a desired chain terminating nucleotide before the nucleotide was used in a modification of the Sanger DNA chain termination method. However, the pre-marked nucleotide was not detectable in the disclosed system. The pre-marked strands of DNA prepared in separate vessels corresponding to the A, T, C, and G DNA bases, were electrophoretically separated and then exposed to a complementary binding material, typically avidin, which had a fluorophore such as fluorescein covalently attached to it. The fluorophore was detected and the signal presence was related to the particular vessel or gel/lane corresponding to A, T, C, or G originally prepared. This post-labeling method requires the preparation and subsequent electrophoretic separation of marked DNA strands in separate vessels and gels/lanes, respectively. There is no disclosure of any method or system capable of labeling DNA strands differentially in the same vessel simultaneously during the reactions of a chain termination method, or differentiating labels during strand detection in a single gel/lane of a suitable detection system.

Detailed Description Text (59):

presence of a chemically reactive functional group capable of covalent attachment either directly or indirectly to nucleotide chain terminators or their analogs;